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EXAMINER

HENNING, MATTHEW T

ART UNIT PAPER NUMBER

2131

DATE MAILED: 03/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/888,316	Applicant(s) VOLPERT, THOMAS R.	
	Examiner Matthew T. Henning	Art Unit 2131	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 December 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,5-10,21-23 and 25-61 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,5-10,21-23 and 25-61 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 August 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

1 This action is in response to the communication filed on 12/27/2005.

2 **DETAILED ACTION**

3 *Response to Arguments*

4 Applicant's arguments with respect to claims 1, 3, 5-10, 21-23, and 25-61 have been
5 considered but are moot in view of the new ground(s) of rejection.

6 The examiner notes that in the interview held 12/15/2005, the examiner reminded the
7 attorney to ensure that no new matter was entered and that any amendments made to the claims
8 were fully supported by the specification. The examiner reiterated that new matter would not be
9 allowed in the claims. As shown below, as indicate below, the specification did not provide
10 proper support for all the newly added claim language and thus the claims have been rejected
11 under 35 USC 112 1st Paragraph.

12 Claims 1, 3, 5-10, 21-23, and 25-61 have been examined. Claims 2, 4, 11-20, and 24
13 have been cancelled.

14 Regarding the previously presented rejection under 35 USC 101, the rejection has been
15 withdrawn because, as the applicant pointed out, the result is useful (hides data), tangible (the
16 encrypted data has a particular meaning), and concrete (reproducible).

17 All objections and rejections not set forth below have been withdrawn.

18 *Specification*

19 The specification is objected to as failing to provide proper antecedent basis for the
20 claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the
21 following is required:

1 Claims 1, 21, and 23 recite the limitations “providing a static control code index”, an
2 “index that is defined prior to receiving the input data string”, and the “control codes are
3 independent of input data string specific characteristics”.

4 See the rejection of these claims under 35 USC 112 1st Paragraph, for further explanation.

5 ***Claim Rejections - 35 USC § 112***

6 The following is a quotation of the first paragraph of 35 U.S.C. 112:

7 The specification shall contain a written description of the invention, and of the manner and process of making
8 and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or
9 with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the
10 inventor of carrying out his invention.
11

12 Claims 1, 3, 5-10, 21-23, and 25-61 are rejected under 35 U.S.C. 112, first paragraph, as
13 failing to comply with the written description requirement. The claim(s) contains subject matter
14 which was not described in the specification in such a way as to reasonably convey to one skilled
15 in the relevant art that the inventor(s), at the time the application was filed, had possession of the
16 claimed invention.

17 Regarding claims 1, 21, and 23, the limitations “providing a static control code index”, an
18 “index that is defined prior to receiving the input data string”, and the “control codes are
19 independent of input data string specific characteristics” are not supported by the specification.
20 Although there was disclosure of providing a control code index, there was no description of the
21 index being static, when the index was defined, or that the index was independent of the input
22 data string. As such, it is unclear whether applicant had possession of the invention in which the
23 order was generated via a random number generator. Therefore, claims 1, 3, 5-10, 21-23, and
24 25-61 are rejected for failing to meet the written description requirement of 35 USC 112 1st
25 Paragraph.

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Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3, 5, 8-10, 21-23, 25-26, 29-40, 44-55, and 29-61 are rejected under 35 U.S.C. 103(a) as being unpatentable over De Maine et al. (US Patent Number 3,656,178) hereinafter referred to as De Maine, and further in view of Cellier et al. (US Patent Number 5,884,269) hereinafter referred to as Cellier.

Regarding claim 1, De Maine disclosed a method for encrypting an input data string comprising a plurality of bits of binary data using a device including a processor communicatively coupled to a memory loaded with an encryption program, the method comprising: receiving an input data string for encryption at a processor (See De Maine Col. 91 Lines 67-73); determining an order in which to query the presence of each of 2^n different configurations of n bits within an input data string (See De Maine Col. 91 Lines 67-74, 256 Byte Table); generating a code associated with the determined order (See De Maine Col. 92 Lines 5-10, Type 2 codes); generating a position code by identifying the positions of each of the 2^n different configurations of n bits in an input data string in accordance with the determined order (See De Maine Col. 92 Lines 31-39, Bit Map); and combining the control code and the position code to form an encrypted data string (See De Maine Col. 92 Lines 40-44), however, De Maine did not specifically disclose providing a static control code index that is defined prior to

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1 receiving the input data string for encryption at the processor, the control code index including a
2 plurality of control codes wherein the values of the plurality of control codes are independent of
3 input data string specific characteristics, or generating a control code using the control code
4 index.

5 Cellier teaches that in a coding method, a table dictionary (control code index) including
6 a plurality of tables should be incorporated and table select (control code), for identifying which
7 table was used in the coding method, should be included with the encoded data (See Cellier Col.
8 4 Line 46 – Col. 5 Line 55 and Col. 13 Lines 24-33).

9 It would have been obvious to the ordinary person skilled in the art at the time of
10 invention to employ the teachings of Cellier in the coding system of De Maine by providing a
11 table dictionary including tables (See De Maine Col. 91 Lines 67-74) which are identified using
12 a table select (control code) and including the table select with the encoded data in order to allow
13 the decoder to identify which table was used for encoding. This would have been obvious
14 because the ordinary person skilled in the art would have been motivated to provide a highly
15 efficient and compact way of mapping the statistics of the input string in order to identify the
16 optimum encoding table.

17 Regarding claim 21, De Maine disclosed a method for encrypting an input data string
18 comprising a plurality of bits of binary data (See De Maine Col. 2 Paragraph 1), the method
19 comprising: using a software program code means embodied on a computer readable medium,
20 receiving an input data string for encryption (See De Maine Col. 91 Lines 67-74); using a
21 software program code means embodied on a computer readable medium, determining an order

1 in which to query the presence of each of 2^n different configurations of n bits within an input
2 data string (See De Maine Col. 91 Lines 67-74, 256 Byte Table); using a software program code
3 means embodied on a computer readable medium, generating a code associated with the
4 determined order (See De Maine Col. 92 Lines 5-10, Type 2 codes); using a software program
5 code means embodied on a computer readable medium, generating a position code by identifying
6 the positions of each of the 2^n different configurations of n bits in an input data string in
7 accordance with the determined order (See De Maine Col. 92 Lines 31-39, Bit Map); and using a
8 software program code means embodied on a computer readable medium, combining the control
9 code and the position code to form an encrypted data string (See De Maine Col. 92 Lines 40-44),
10 however, De Maine did not specifically disclose providing a static control code index that is
11 defined prior to receiving the input data string for encryption at the processor, the control code
12 index including a plurality of control codes wherein the values of the plurality of control codes
13 are independent of input data string specific characteristics, or generating a control code using
14 the control code index.

15 Cellier teaches that in a coding method, a table dictionary (control code index) including
16 a plurality of tables should be incorporated and table select (control code), for identifying which
17 table was used in the coding method, should be included with the encoded data (See Cellier Col.
18 4 Line 46 – Col. 5 Line 55 and Col. 13 Lines 24-33).

19 It would have been obvious to the ordinary person skilled in the art at the time of
20 invention to employ the teachings of Cellier in the coding system of De Maine by providing a
21 table dictionary including tables (See De Maine Col. 91 Lines 67-74) which are identified using

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1 a table select (control code) and including the table select with the encoded data in order to allow
2 the decoder to identify which table was used for encoding. This would have been obvious
3 because the ordinary person skilled in the art would have been motivated to provide a highly
4 efficient and compact way of mapping the statistics of the input string in order to identify the
5 optimum encoding table.

6 Regarding claim 23, De Maine disclosed a computer usable medium storing a computer
7 program for encrypting an input data string comprising a plurality of bits of binary data (See De
8 Maine Col. 2 Paragraph 1), the method comprising: computer readable code for receiving an
9 input data string for encryption; computer readable code for determining an order in which to
10 query the presence of each of 2^n different configurations of n bits within an input data string (See
11 De Maine Col. 91 Lines 67-74, 256 Byte Table); computer readable code for generating a code
12 associated with the determined order (See De Maine Col. 92 Lines 5-10, Type 2 codes);
13 computer readable code for generating a position code by identifying the positions of each of the
14 2^n different configurations of n bits in an input data string in accordance with the determined
15 order (See De Maine Col. 92 Lines 31-39, Bit Map); and computer readable code for combining
16 the control code and the position code to form an encrypted data string (See De Maine Col. 92
17 Lines 40-44), however, De Maine did not specifically disclose providing a static control code
18 index that is defined prior to receiving the input data string for encryption at the processor, the
19 control code index including a plurality of control codes wherein the values of the plurality of
20 control codes are independent of input data string specific characteristics, or generating a control
21 code using the control code index.

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1 Cellier teaches that in a coding method, a table dictionary (control code index) including
2 a plurality of tables should be incorporated and table select (control code), for identifying which
3 table was used in the coding method, should be included with the encoded data (See Cellier Col.
4 4 Line 46 – Col. 5 Line 55 and Col. 13 Lines 24-33).

5 It would have been obvious to the ordinary person skilled in the art at the time of
6 invention to employ the teachings of Cellier in the coding system of De Maine by providing a
7 table dictionary including tables (See De Maine Col. 91 Lines 67-74) which are identified using
8 a table select (control code) and including the table select with the encoded data in order to allow
9 the decoder to identify which table was used for encoding. This would have been obvious
10 because the ordinary person skilled in the art would have been motivated to provide a highly
11 efficient and compact way of mapping the statistics of the input string in order to identify the
12 optimum encoding table.

13 Regarding claims 3 and 25, De Maine and Cellier disclosed determining an order
14 comprises selecting a predetermined order (See De Maine Col. 91, 256 Byte Table and the
15 rejection of claim 1 above).

16 Regarding claims 5, 22, and 26, De Maine and Cellier disclosed dividing the input data
17 string into a plurality of blocks of data (See De Maine Col. 92 Lines 31-38).

18 Regarding claim 8, and 30, De Maine and Cellier disclosed generating a plurality of
19 block codes associated with a plurality of blocks of data, each block code indicating the number
20 of bits within the associated block of data (See De Maine Col. 101 Lines 45-52).

1 Regarding claim 9, and 31, De Maine and Cellier disclosed combining the each of the
2 plurality of block codes with the control code and the position code for the associated block of
3 data (See De Maine Col. 101 Lines 45-52 and the rejection of claim 1 above).

4 Regarding claim 10, and 32, De Maine and Cellier disclosed that determining an order
5 comprises determining an order based on the frequencies of the 2^n combinations of the n bits of
6 the input data string (See De Maine Col. 101 Lines 20-25).

7 Regarding claims 29, and 50, De Maine and Cellier disclosed that the computer readable
8 code for determining an order further comprises computer readable code for determining a first
9 order associated with a first block of data and determining a second order associated with a
10 second block of data wherein the first order is different than the second order (See De Maine
11 Col. 91 Lines 67-74).

12 Regarding claim 33, De Maine and Cellier disclosed that the computer readable code for
13 determining an order further comprises computer readable code for determining an order in
14 which to query the presence of each of 2^n different configurations of n bits based on an analysis
15 of the input data (See De Maine Col. 91 Lines 67-74).

16 Regarding claims 34 and 48, De Maine and Cellier disclosed generating the control code
17 based on the input string (See De Maine Col. 91 Lines 67-74 and the rejection of claim 1 above),
18 but failed to disclose randomly generating the control code. However, it was well known in the
19 art at the time of invention that an input to a function could be random. It therefore would have
20 been obvious to the ordinary person skilled in the art at the time of invention that when the input
21 was random, the control code generated would also be random since it was based on the input.

1 This would have been obvious because the ordinary person skilled in the art would have used
2 what was well known in the art to come to this conclusion.

3
4 Regarding claims 35, and 49, De Maine and Cellier disclosed generating the control code
5 based on a mathematical formula (See De Maine Col. 91 Lines 67-74 and the rejection of claim 1
6 above)

7 Regarding claims 36 and 51, De Maine and Cellier disclosed determining whether the
8 input data string can be compressed simultaneously as it is encrypted (See De Maine Col. 101
9 Lines 20-28).

10 Regarding claims 37 and 52, De Maine and Cellier disclosed dividing the input data
11 string into n bit sequences (See De Maine Col. 91 Lines 67-74); comparing each of the 2^n
12 different configurations of n bits with each of the n bit sequences (See De Maine Col. 91 Lines
13 67-74); determining the frequency of each of the 2^n different configurations appearing in the
14 input data string (See De Maine Col. 91 Lines 67-74); determining whether a specific
15 relationship exists between values of the frequencies of each of the individual 2^n different
16 configurations appearing in the input data string wherein the existence of the specific
17 relationship is indicative of the presence of a characteristic within the input data string and
18 wherein the presence of the characteristic indicates that the input data string can be compressed
19 simultaneously as it is encrypted (See De Maine Col. 101 Lines 20-25); selecting a first position
20 code routine associated with the determined order when the specific relationship exists, the first
21 position code being operable to encrypt and compress the input data string (See De Maine Col.

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1 101 Lines 20-25 and Col. 92 Paragraphs 1-2); and selecting a second position code routine
2 associated with the determined order when the specific relationship does not exist, the second
3 position code being operable to encrypt the input data string without any compression (See De
4 Maine Col. 101 Lines 20-25 and Col. 92 Paragraphs 1-2).

5 Regarding claims 38 and 53, De Maine and Cellier disclosed that the determining the
6 order in which to query the presence of each of 2^n different configurations of n bits within an
7 input data string comprises computer readable code for determining the order in which to query
8 the presence of each of 2^2 different configurations of 2 bits within an input data string (See De
9 Maine Col. 91 Lines 47-48).

10 Regarding claims 39 and 54, De Maine and Cellier disclosed dividing the input data
11 string into n bit sequences (See De Maine Col. 91 Lines 67-74); comparing each of the 2^n
12 different configuration of n bits with each of the n bit sequences of the input data string (See De
13 Maine Col. 91 Lines 67-74); determining a first number representative of the number of times
14 the most frequently occurring 2^n configuration appears in the input string; determining a second
15 number representative of the number of times the second most frequently occurring 2^n
16 configuration appears in the input string; determining a third number representative of the
17 number of times the third most frequently occurring 2^n configuration appears in the input string
18 determining a fourth number representative of the number of times the fourth most frequently
19 occurring 2^n configuration appears in the input string (See De Maine Col. 91 Lines 67-74);
20 selecting a first position code routine associated with the determined order when the first number
21 is greater than the sum of the third number and the fourth number, the first position code routine

1 being operable to encrypt and compress the input data string (See De Maine Col. 92 Paragraphs
2 1-2 and Col. 101 Lines 20-27); and selecting a second position code routine associated with the
3 determined order when the first number is not greater than the sum of the third number and the
4 fourth number, the second position code routine being operable to encrypt the input data string
5 without any compression (See De Maine Col. 92 Paragraphs 1-2 and Col. 101 Lines 20-27).

6 Regarding claims 40 and 55, De Maine and Cellier disclosed that generating a control
7 code associated with the determined order, further comprises: generating a first control code
8 associated with the determined order when the first position code routine is selected; and
9 generating a second control code associated with the determined order when the second position
10 code routine is selected wherein the first control code is different than the second control code
11 (See De Maine Col. 92 Paragraphs 1-2).

12 Regarding claims 44 and 59, De Maine and Cellier disclosed selecting a default order
13 (See De Maine Col. 91 Lines 67-74 and the rejection of claim 1 above).

14 Regarding claims 45-46 and 60-61, De Maine and Cellier disclosed determining an order
15 based on the relative frequencies of the combinations of n bits (See De Maine Col. 91 Lines 67-
16 74).

17 Regarding claim 47, De Maine and Cellier disclosed determining the order based on an
18 analysis of the input data string (See De Maine Col. 91 Lines 67-74).

19

1 Claims 6-7, and 27-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over De
2 Maine and Cellier as applied to claims 5, and 26 respectively, and further in view of Shimizu et
3 al. (US Patent Number 6,772,343) hereinafter referred to as Shimizu.

4 De Maine and Cellier disclosed blocking the input data into block sizes of a certain range
5 (See De Maine Col. 92 Lines 31-38) but failed to disclose determining the size of the blocks
6 randomly or mathematically.

7 Shimizu teaches that in a block encoding system, generating each block size randomly
8 makes illicit access of the data more difficult and makes the cryptosystem more robust (See
9 Shimizu Col. 5 Lines 9-18). Shimizu further teaches that the random sizes are generated
10 mathematically using a seed (See Shimizu Col. 15 Paragraphs 3-7).

11 It would have been obvious to the ordinary person skilled in the art at the time of
12 invention to employ the teachings of Shimizu in the invention of De Maine and Cellier to
13 mathematically generate random block lengths. This would have been obvious because the
14 ordinary person skilled in the art would have been motivated to provide the added security of
15 random block lengths to the compressed data.

16
17 Claims 41-42, and 56-57 are rejected under 35 U.S.C. 103(a) as being unpatentable over
18 De Maine and Cellier as applied to claim 1 above, and further in view of Weiss (US Patent
19 Number 5,479,512).

20 De Maine and Cellier disclosed compressing input data (See De Maine Cols. 91-92), but
21 failed to disclose re-encrypting the data after the compression was performed.

1 Weiss teaches that after compression is performed, the compressed data should be
2 XORed with a key, in small blocks at a time (See Weiss Col. 5 Paragraphs 4-5 and Col. 6
3 Paragraph 3 and Fig. 3A).

4 It would have been obvious to the ordinary person skilled in the art at the time of
5 invention to employ the teachings of Weiss in the compression system of De Maine and Cellier
6 by XORing the coded data with a key in small blocks at a time. This would have been obvious
7 because the ordinary person skilled in the art would have been motivated to protect the data from
8 unauthorized observing.

9 Claims 41, 43, 56, and 58 are rejected under 35 U.S.C. 103(a) as being unpatentable over
10 De Maine and Cellier as applied to claim 1 above, and further in view of Butler et al. (US Patent
11 Number 5,861,887) hereinafter referred to as Butler.

12 De Maine and Cellier disclosed compressing input data (See De Maine Cols. 91-92), but
13 failed to disclose re-encrypting the data after compression was performed.

14 Butler teaches that compression should be repeated as many times as necessary in order
15 to make the data being compressed sufficiently small (See Butler Col. 3 Paragraph 2).

16 It would have been obvious to the ordinary person skilled in the art at the time of
17 invention to employ the teachings of Butler in the compression system of De Maine and Cellier
18 by repeating the compression on the coded output as many times as necessary to get the output to
19 be sufficiently small. This would have been obvious because the ordinary person skilled in the
20 art would have been motivated to provide more efficient storage of the audio data.

21
22 *Conclusion*

1 Claims 1, 3, 5-10, 21-23, and 25-61 have been rejected.

2 Applicant's amendment necessitated the new ground(s) of rejection presented in this
3 Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).
4 Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

5 A shortened statutory period for reply to this final action is set to expire **THREE**
6 **MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO**
7 **MONTHS** of the mailing date of this final action and the advisory action is not mailed until after
8 the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period
9 will expire on the date the advisory action is mailed, and any extension fee pursuant to 37
10 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,
11 however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this
12 final action.

13 Any inquiry concerning this communication or earlier communications from the
14 examiner should be directed to Matthew T. Henning whose telephone number is (571) 272-3790.
15 The examiner can normally be reached on M-F 8-4.

16 If attempts to reach the examiner by telephone are unsuccessful, the examiner's
17 supervisor, Ayaz Sheikh can be reached on (571) 272-3795. The fax phone number for the
18 organization where this application or proceeding is assigned is 571-273-8300.

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1 Information regarding the status of an application may be obtained from the Patent
2 Application Information Retrieval (PAIR) system. Status information for published applications
3 may be obtained from either Private PAIR or Public PAIR. Status information for unpublished
4 applications is available through Private PAIR only. For more information about the PAIR
5 system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR
6 system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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13 Matthew Henning
14 Assistant Examiner
15 Art Unit 2131
16 3/14/2006



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